

TABLE 4.3.4
DESCRIPTION OF REMEDIAL ACTION ALTERNATIVES
OPERABLE UNIT 4 – SITE-WIDE BEDROCK GROUNDWATER
PHASE III REMEDIAL ACTION PLAN
FORMER AEROVOX FACILITY
NEW BEDFORD, MASSACHUSETTS

The Aerovox Project Operable Unit 4 (OU4) is comprised of remedial alternatives to address the shallow and deep bedrock groundwater at the Site. The remedial goals for OU4 are to:

1. Reduce concentrations of CVOs and PCBs in fractured bedrock where they exceed their corresponding UCLs to below UCLs.
2. Reduce concentrations of contaminants in bedrock groundwater to achieve a stable or contracting plume.
3. Eliminate, to the extent feasible, and control migration of DNAPL in fractured bedrock that may be a source of impacts to GW or that may be non-stable.

Parameter	ALTERNATIVE 1	ALTERNATIVE 2
	In-Situ Chemical Oxidation of Bedrock Groundwater Hot Spots and Monitored Natural Attenuation	In-Situ Thermal Treatment of Deep Bedrock Hot Spots, In-Situ Chemical Oxidation of Shallow Bedrock Hot Spots and Monitored Natural Attenuation
Size and Configuration	This alternative includes: In situ treatment of DNAPL and groundwater UCL exceedances in fractured bedrock using chemical oxidation, monitored natural attenuation for residual COCs in groundwater. This alternative involves the injection of reagent(s) into the subsurface to chemically break down DNAPL and contaminants in groundwater at concentrations in excess of their UCLs. The injections would be used in combination with extraction wells to provide circulation of the reagents through the treatment zone in deep bedrock; recirculation not required for shallow bedrock. The selected treatment process would be used to remove source area hotspots. A groundwater monitoring program would be implemented to confirm reduction of COCs to levels below UCLs and to monitor natural attenuation after treatment and demonstrate a stable or shrinking groundwater plume.	This alternative includes: In situ treatment of DNAPL and groundwater UCL exceedances in deep fractured bedrock using thermal treatment and in shallow bedrock using chemical oxidation, monitored natural attenuation for residual COCs in groundwater. The thermal treatment component involves heating the fractured rock and groundwater (using heating elements installed in borings and steam injection wells) to volatilize contaminants in groundwater (with multi-phase extraction wells) at concentrations in excess of their respective UCLs. The extracted groundwater and vapors would be treated above ground. The chemical treatment component involves oxidizing the contaminants in groundwater. These two components would be used to remove source area hotspots. A groundwater monitoring program would be implemented to confirm reduction of COCs to levels below UCLs and to monitor natural attenuation after treatment and demonstrate a stable or shrinking groundwater plume.
Remediation Time	Remedy construction is estimated to take five to six months. Injections are estimated to occur at a frequency of once every six to twelve months. Operation of this remedy would extend approximately two to three years.	Remedy construction and implementation of thermal treatment is expected to take three months Injections are estimated to occur at a frequency of once every six to twelve months Operation of this remedy would extend approximately one to two years
Spatial Requirements	Remedial activities could be conducted within the confines of the Site.	Remedial activities could be conducted within the confines of the Site.
Disposal Options	Waste soil and groundwater would be generated during installation and development of monitoring, injection and extraction wells and would be transported and disposed off-site at an approved facility.	Spent liquid and vapor phase carbon would be generated under this remedial alternative and would be transported and disposed off site. Additionally, waste soil and groundwater would be generated during installation and development of thermal remediation, injection, monitoring and extraction wells and would be transported and disposed off-site at an approved facility.
Substantive Permit	Work in the Riverfront Area and Buffer Zone may require permitting under the Wetlands	Work in the Riverfront Area and Buffer Zone may require permitting under the Wetlands

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Requirements	<p>Protection act and local ordinances.</p> <p>Work within 25 feet of the River would need to be designed to support the City of New Bedford's planned Riverwalk.</p> <p>Would require prior DEP approval for addition of Remedial Additives (if any) within 50 feet of the Acushnet River.</p>	<p>Protection act and local ordinances.</p> <p>Work within 25 feet of the River would need to be designed to support the City of New Bedford's planned Riverwalk.</p> <p>Discharge of groundwater to surface water or to the local POTW would require permitting and/or approvals.</p> <p>Would require prior DEP approval for addition of oxidation reagents within 50 feet of the Acushnet River.</p>
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Notes:

1. Timeframes, area and volumes presented in the table are estimates.
2. The conceptual plans for Alternatives 1 and 2 are presented as **Figures 5-1 and 5-2.**

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